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US 4649819 A US 4203362 A

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(54) Self-inking hand stamp

(57) A hand stamp has a handle 14 from which is suspended a pre-inked stamp 18, the handle being resiliently urged in an upward sense. The handle 14 is connected by a screw threading 56, 58 to a shaft 30 supporting the stamping member, enabling adjustment to vary the extent of depression of the handle before it contacts a stop surface 44. Thus the compression of ink pad 18a can be adjusted in order to compensate for drying of the pad etc. Relative rotation of handle 14 to shaft 30 is normally prevented by engagement of projection 74 on handle upper body 50 in recesses 76 on an intermediate member 60 which is itself non-rotatable with respect to housing it.

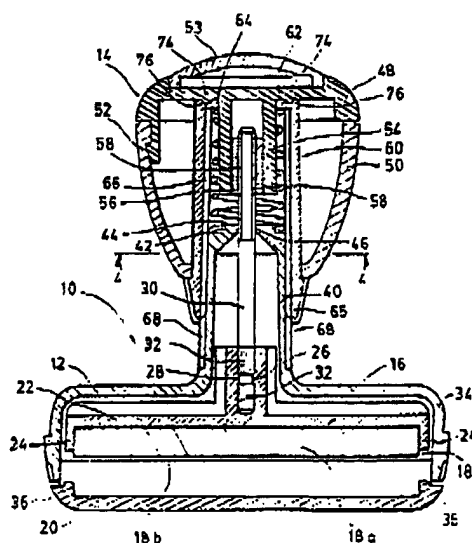


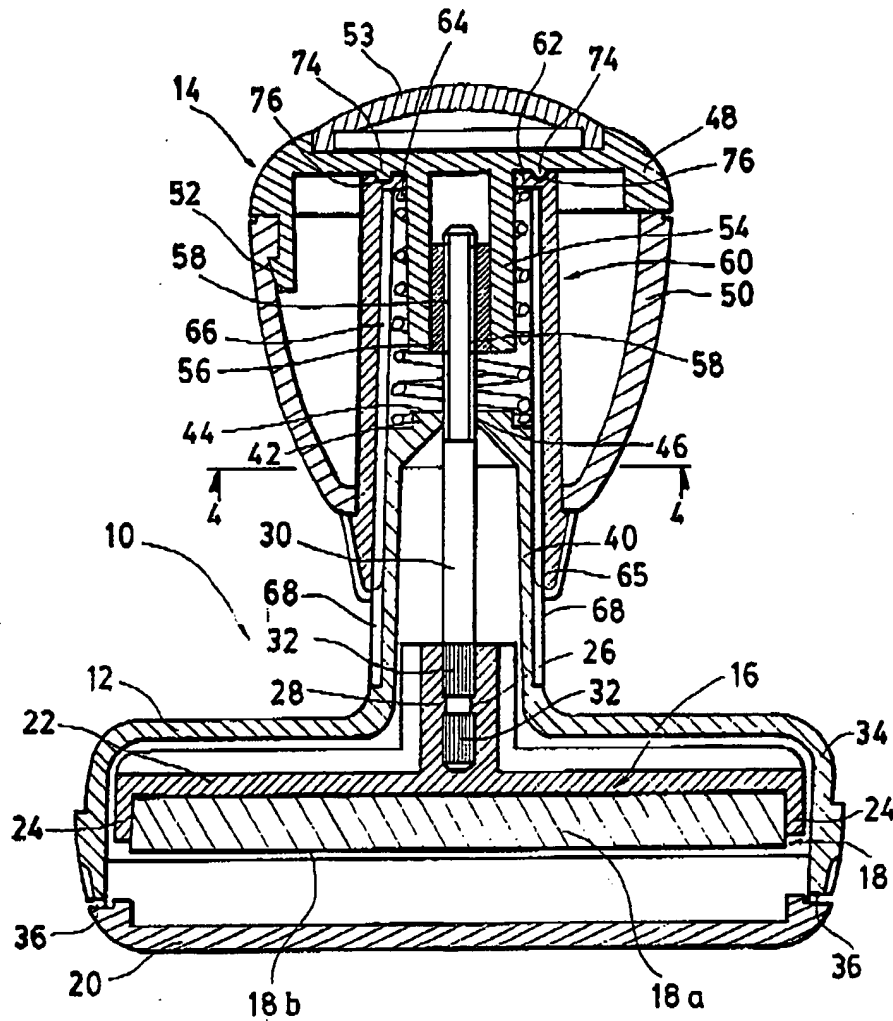
Fig. 1

At least one drawing originally filed was informal and the print reproduced here is taken from a later filed formal copy.

This print takes account of replacement documents submitted after the date of filing to enable the application to comply with the formal requirements of the Patents Rules 1982.

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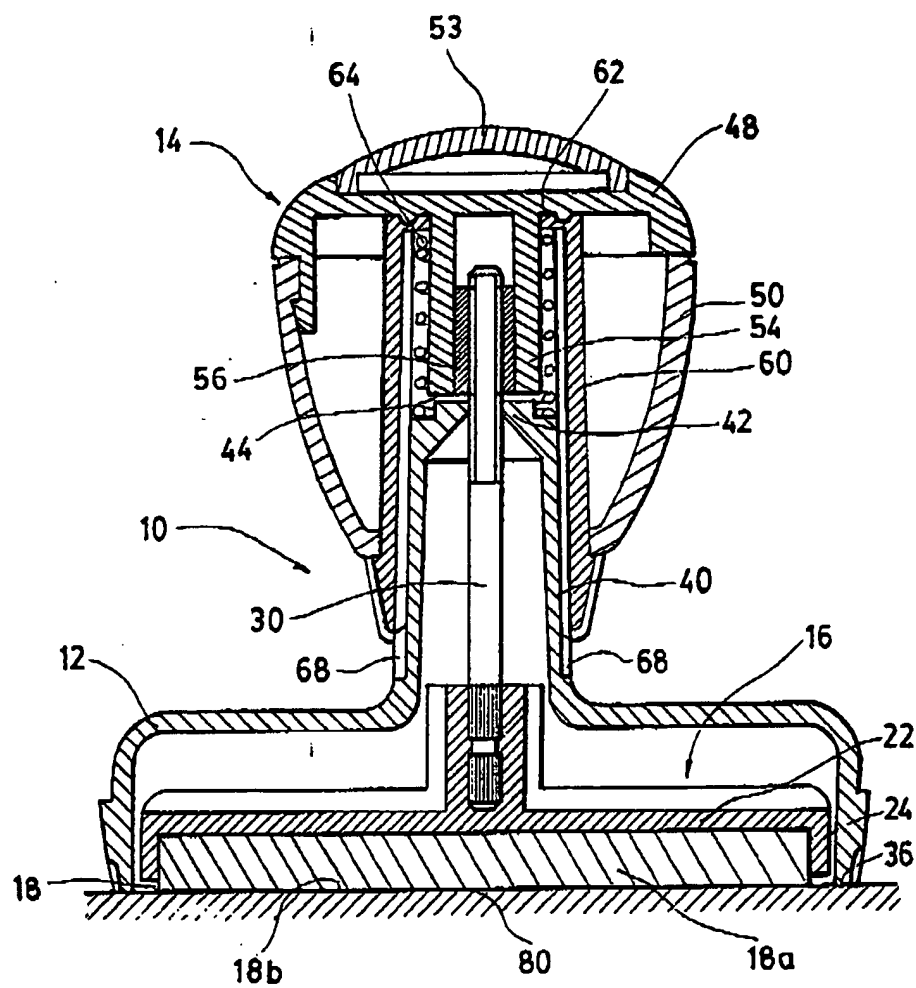


Fig. 2

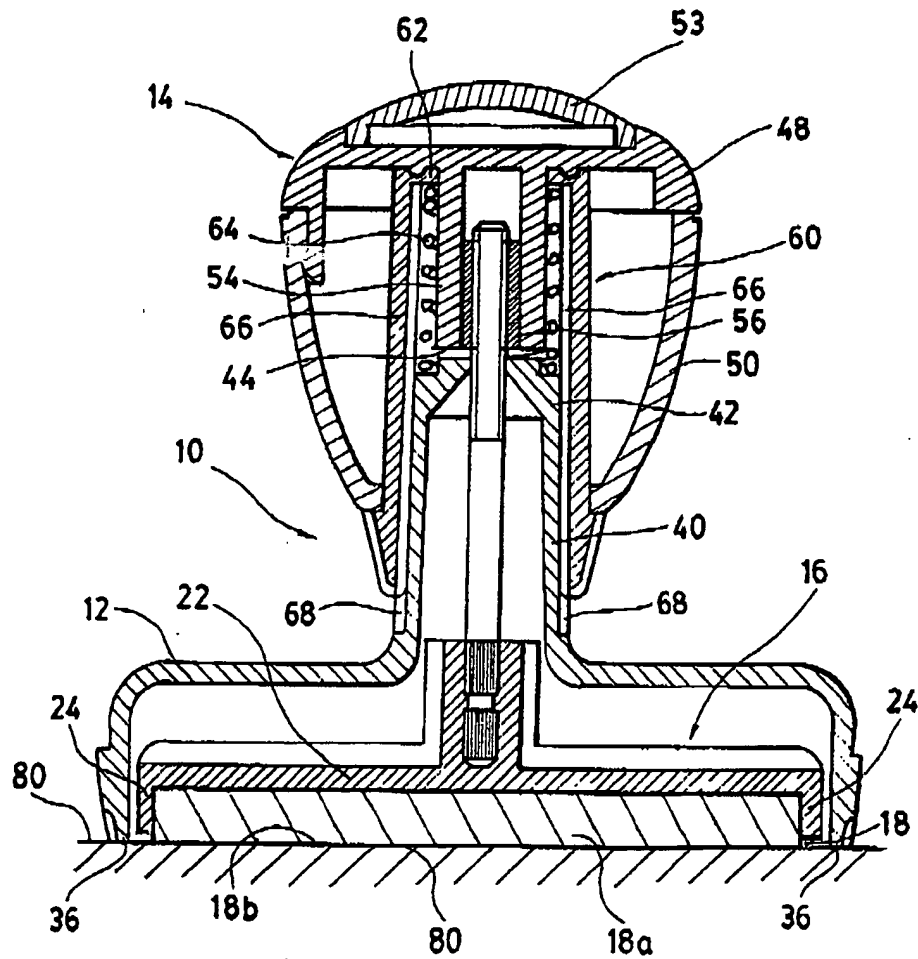


Fig. 3

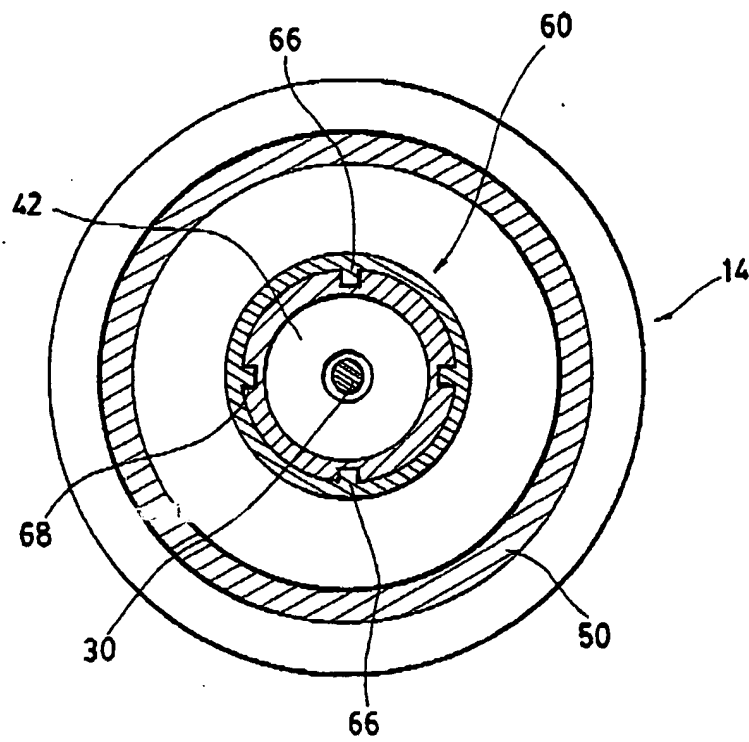


Fig. 4

25-1080.1270.

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IMPROVEMENTS IN INK STAMPS

5 This invention relates to ink stamps.

In particular the invention relates to ink stamps of the type in which an ink impression is made on a substrate like a piece of paper by placing the stamp over the region to be printed and then resiliently depressing a
10 handle to push an inked surface down onto the paper. For example an ink stamp of this type is shown in United States Patent No. 4 022 127.

As explained in that Patent there are difficulties in ensuring that the correct amount of ink is
15 expelled each time the stamp is used. Thus, as the stamping ink is consumed, the stamping block, which carries the inked surface, becomes thinner and so the handle needs to be depressed by differing amounts to ensure that only the right amount of ink is expelled and used each time. If
20 the handle is depressed too far and the ink pad compressed too much then too much ink becomes expelled giving an unnecessarily heavy impression which may also have disadvantages of not drying quickly, and conversely, if the handle is not depressed far enough then equally the
25 resulting printed impression may not be legible.

The above noted Patent describes one way of overcoming this problem by using a two part bushing of

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variable length. This is disposed between the handle and the base and stop means are provided to limit the amount the handle can be depressed. This amount can be varied by the relative rotation of the two part bushing. The
5 arrangement is, however, relatively complicated both in the number of parts used and in the assembly and construction of the stamp.

It is, therefore, an object of the present invention to provide a stamp of this general type which is
10 simpler and easier to construct.

According to the invention there is provided an ink stamp, comprising a hollow base having downwardly extending side edges capable of resting on a surface to be provided with an inked impression so positioning the stamp
15 over that surface, a pre-inked stamp having a lower relief printing surface positioned within that hollow base, an upwardly extending shaft from which the stamp is suspended and which can be moved downwardly by a handle relative the base to bring the relief surface into contact with the
20 surface to be given the impression, stop means engageable by the handle to limit downward travel of the handle, screw-thread means joining the handle and the shaft to enable rotation of the handle relative the shaft to adjust the position of the lower relief printing surface relative
25 the handle and the stop means, adjustment means normally preventing relative rotation of the handle and shaft, and resilient means for urging the handle and the inked stamp

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to an upper position, downward pressure on the handle overcoming the resilient means and pressing the inked relief surface against a support to be given the impression.

5 Such an arrangement is simple and uses a minimal number of pieces. At the same time the parts are easy to assemble. By rotating the handle relative the shaft one can raise or lower the shaft, depending upon the direction of rotation, relative the handle and hollow base. In this
10 way the initial position of the inked member within the hollow base can be changed and so the extent of depression of the handle before it contacts the stop means limit can be varied. In this way one can quickly and easily adjust the extent to which the inked pad is lowered and compressed
15 during the stamping operation and so control the amount of ink deposited in the impression irrespective of depletion of the ink and consequent changes in the thickness of the ink pad.

 The adjustment means preferably comprise an
20 intermediate member which is constrained to move in an up and down sense relative the base and so is movable by and with the handle, and which has means for engaging the handle normally to prevent relative rotational movement of the handle. This intermediate member can be constrained
25 against rotation by having a number of splines which slide in and engage in corresponding recesses on a spigot

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upstanding from the base. The stop means can also comprise an abutment surface formed on that spigot to be contacted by the handle and so limit the downward extent of movement of the handle.

5 The resilient means can comprise a spring which urges the intermediate member in an upward sense into contact with the handle.

Detent means are preferably provided between the intermediate member and the handle so as to fix the two
10 temporarily in a preselected position of relative angular rotation. These detent means are preferably in the form of a plurality of angularly spaced projections on one and corresponding recesses on the other.

An ink stamp according to the invention will now
15 be described, by way of example, with reference to the accompanying drawings in which:

Figure 1 is an upright section through the stamp;
Figure 2 is a similar section showing the stamp
in use with the handle depressed to make an ink
20 impression;

Figure 3 is a section similar to Figure 1 showing the stamp after the adjustment; and
Figure 4 is a section taken on the line 4-4 of Figure 1.

25 The ink stamp 10 shown in the drawings comprises a hollow base 12 and an upstanding handle 14. Within the hollow base 12 is a support 16 for a printing block 18.

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This is well-known and comprises a pad 18a of porous material soaked with ink having a relief surface on it's underface 18b which is not shown in detail. Such blocks 18 are well known and it is not believed that the block
5 requires any further explanation. When the ink stamp 10 is not in use, the base 12 is enclosed by a cover 20 which is a friction fit onto the base but can be removed for use of the stamp.

The support 16 is in the shape of a rectangular
10 plate 22 with downwardly depending flanges 24 around it's edges. These flanges, together with the underside of the base of the plate 22, define a region in which the printing block 18 is fixed and held. Integrally formed with the plate 22 an upstanding from its centre is a spigot 26.
15 This has a central bore 28 into which is fitted the lower end of an upright metal shaft 30. The latter has knurled portions 32 which are a tightly wedged fit within the bore 28.

The base 12 is of substantially rectangular shape
20 as seen in plan and has an integral downwardly depending rim 34 all the way around it's edge having a downwardly facing surface 36. The hollow cover 12 encompasses the support 16 and the block 18 and, in the non-use position shown in Figure 1, the support 16 is positioned in an upper
25 position with the top surface of the plate 22 engaging the underside of the cover 12. In that position, however, the flange 34 extends downwardly well beyond the lower relief

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surface 18b of the block 18. In this way, when the cover
20 is removed, the stamp can rest on the lower surface 36
of the rim 34 with the inked relief surface 18b of the
block 18 clear of a substrate to be printed, until the
5 handle 14 is depressed to make an ink impression as will be
described.

Integrally formed with the base 12 is a central
upstanding hollow spigot 40 within which the spigot 26 and
shaft 30 extend. At the top of the spigot 40 is an
10 inwardly directed flange 42 and thus has an upper stop
surface 44. The flange 42 has a central bore 46 through
which the shaft 30 is slideably supported.

The handle 14 has, for convenience of moulding,
been made in two parts, an upper part 48 and a lower part
15 50 which are joined together in a snap-fit fashion by small
downwardly extending fingers 52 which are integrally formed
with the upper part 48. At the top of the handle 14 is a
transparent domed cover 53 and beneath this a copy of the
ink impression to be made by the surface 18b can be placed.

20 Integrally formed with the part 48 and downwardly
depending therefrom is a central hollow sleeve 54. Fixed
into the lower end of this is a metal insert 56. This
insert 56 has an inward facing threading which is
threadedly engaged over an external threading 58 on the
25 upper end of the shaft 30. This joins handle 14 to the
shaft 30.

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Between the handle 14 and around the sleeve 54 and spigot 40 is an intermediate member 60. At its top it has an inwardly directed flange 62 and between the stop surface 44 and the flange 62 is provided a coil spring 64.

5 This resiliently urges the member 60 in the upward sense and, by virtue of the contact of the top of that member 60 with the underside of the part 48, urges the handle 14 and shaft 30 to be raised and the support 16 to be brought to the upward position shown in Figure 1.

10 At its lower end the member 60 has an enlarged knurled end 65. This is larger than the lower end of the part 50. In addition and as best seen in Figure 4, the member 60 has four inwardly directed splines 66 which engages in four upright recesses 68 formed in the outside
15 face of the spigot 40. In this way the member 60 can move up and down with the handle but cannot rotate relative the spigot 40 and base 12.

In the underside of the part 50 are provided a number of semi-spherical projections 74 spaced equally
20 around a circle. Corresponding semi-spherical shaped recesses 76 are provided in the top surface of the intermediate member 60. Thus, the parts 48 and 50 of the handle 14 are prevented from rotating relative the intermediate member 60 in the normal situation by the
25 engagement of the projections 74 in the recesses 76, and as explained above the intermediate member 60 is itself in turn prevented from rotating relative the base 12 by the

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engagement of the splines 66 in the recesses 68. However,
these projections 74 and recesses 76 can be disengaged by
downward movement of the intermediate member 60 relative
the handle 14 by grasping the end 65 between the fingers
5 and moving this downwardly relative the rest of the stamp,
so temporarily releasing the projections 74 from the
recesses 76. Then the handle 14 can be rotated relative
the rest of the stamp. This relative rotation will cause
the insert 56 to screw along the threading 58 on the shaft
10 30 for adjustment as will be described. Thereafter, when
the end 65 is released the intermediate member 60 and
handle 14 will again come together under the effect of the
spring 64 and the projections 74 will re-engage with the
recesses 76 to prevent further rotation of the handle 14
15 until required.

In use the user first of all removes the cover 20
and then places the stamp 10 on a flat surface 80 which is
to be given an ink impression shown in Figure 2. In this
position it will be noted that the lower end 36 of the
20 flange 34 rests on the surface 80 but the relief inked
underface 18b on the printing block 18 will remain clear of
the surface 80. When the user presses downwardly on the
handle 14 this will move downwardly against the spring 68
and take with it the intermediate member 60. The downward
25 movement will also move shaft 30 downwardly. As a result
the support 16 and printing block 18 move downwardly to the
position shown in Figure 2 where the lower inked relief

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underface 18b on the block 18 will make an ink impression on the surface 80. When the user releases the handle 14 the spring 68 will restore the parts to the position shown in Figure 1 and then a further impression can be made.

5 It is a problem with stamps of this general type that the overall height of the pad 18a can vary depending on the depletion of it's ink. Additionally some users are likely to press harder than others with the result that a very wet ink impression may be given if someone presses too
10 hard and this is liable to smudge.

 To avoid this in a stamp according to the invention, the lower end of the sleeve 54 is arranged to engage the stop surface 44 at the lower limit of downward movement allowed. This is the position shown for example
15 in Figure 2 and the dimensions are chosen so that when this position is reached in Figure 2 the ink pad 18 is then in contact with the surface 80 at the required pressure and any further downward pressure by the user will merely be transferred to the stop surface 44 without squeezing excess
20 ink out from the pad 18a.

 However, because the overall height of the pad will vary as the ink becomes depleted some adjustment is necessary to accommodate this. Thus, as the ink becomes depleted and the pad 18a gets thinner, it is necessary to
25 press down further to provide the same degree of contact with and pressure on the surface 80. This is achieved

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according to the invention by progressively lowering the shaft 30 relative the handle 14.

To achieve this, the user grasps the end 65 on the intermediate member 60 and moves this downwardly
5 against the action of the spring 64. This releases the projections 74 from the recesses 76. The handle 14 can then be rotated relative the shaft 30 to cause the insert 56 to thread it's way further down the shaft 30 so that the starting position of the support 16 is now somewhat lower
10 relative the outer cover 12. Thereafter, when the end 65 is released, the spring 64 re-engages the projections 74 and recesses 76 and so prevents further rotation of the handle 14.

As best seen in Figure 3, when the lower end of
15 the sleeve 54 engages the stop surface 44 in the newly adjusted position, the underface 18b on the underside of the block 18 still reaches the surface 80 to give an ink impression on it even though now it can be seen that the pad 18a is much thinner than it was in Figures 1 and 2.

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CLAIMS:

1. An ink stamp, comprising a hollow base having downwardly extending side edges capable of resting on a surface to be provided with an inked impression so
5 positioning the stamp over that surface, a pre-inked stamp having a lower relief printing surface positioned within that hollow base, an upwardly extending shaft from which the stamp is suspended and which can be moved downwardly by a handle relative the base to bring the relief surface into
10 contact with the surface to be given the impression, stop means engageable by the handle to limit downward travel of the handle, screw-thread means joining the handle and the shaft to enable rotation of the handle relative the shaft to adjust the position of the lower relief printing surface
15 relative the handle and the stop means, adjustment means normally preventing relative rotation of the handle and shaft, and resilient means for urging the handle and the inked stamp to an upper position, downward pressure on the handle overcoming the resilient means and pressing the
20 inked relief surface against a support to be given the impression.
2. An ink stamp as claimed in Claim 1 in which the adjustment means comprise an intermediate member which is constrained to move in an up and down sense relative the
25 base and so is movable by and with the handle, and which has means for engaging the handle normally to prevent relative rotational movement of the handle.

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3. An ink stamp as claimed in Claim 2 in which the intermediate member constrained against rotation by having a number of splines which slide in and engage in corresponding recesses on a spigot upstanding from the base.
4. An ink stamp as claimed in Claim 3 in which the stop means comprise an abutment surface formed on that spigot to be contacted by the handle and so limit the downward extent of movement of the handle.
5. An ink stamp as claimed in any of Claims 2 to 4 in which detent means are provided between the intermediate member and the handle so as to fix the two temporarily in a preselected position of relative angular rotation.
6. An ink stamps as claimed in Claim 5 in which those detent means are in the form of a plurality of angularly spaced projections on one and corresponding recesses on the other.
7. An ink stamp substantially as herein described with reference to the accompanying drawings.

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